

CLAIMS

1. A video transmitting apparatus for layered-coding and transmitting input video as a video stream of a base layer and enhancement layer, the video transmitting apparatus comprising:

a first coding section that codes the base layer;

a calculating section that calculates divided regions in coding the enhancement layer; and

a second coding section that performs intra-frame coding on the enhancement layer for each calculated divided region.

2. The video transmitting apparatus according to claim 1, further comprising:

a first generating section that generates information related to a storing position of the coded enhancement layer for each calculated divided region; and

an extracting section that extracts video data of a region of interest from the coded enhancement layer using the generated storing position information.

3. The video transmitting apparatus according to claim 1, wherein the calculating section calculates divided regions so that regions having same or similar motion vectors are the same region.

4. The video transmitting apparatus according to claim
1, wherein the calculating section calculates divided
regions so that a specific region in video is divided
5 into small regions.

5. The video transmitting apparatus according to claim
1, wherein the calculating section calculates divided
regions so that a size of each region becomes equal to
10 a detection result of an object.

6. The video transmitting apparatus according to claim
1, wherein the calculating section calculates divided
regions so that a central part of a screen is divided
15 into small regions.

7. The video transmitting apparatus according to claim
1, further comprising an acquiring section that acquires
information related to a region of interest,
20 wherein the calculating section calculates divided
regions using the acquired information relate to the
region of interest.

8. The video transmitting apparatus according to claim
25 1, further comprising a first transmitting section that
transmits information related to the calculated divided
regions.

9. The video transmitting apparatus according to claim 1, further comprising:

a second generating section that generates decoding region information indicating a region that requires decoding to decode the coded enhancement layer in the coded base layer; and

a second transmitting section that transmits the generated decoding region information.

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10. The video transmitting apparatus according to claim 9, wherein the second transmitting section stores the generated decoding region information in a user region of the coded base layer and performs transmission.

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11. A video receiving apparatus for receiving a video stream transmitted from the video transmitting apparatus according to claim 1, the video receiving apparatus comprising:

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a first receiving section that receives a coded base layer;

a first decoding section that decodes the received coded base layer;

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a second receiving section that receives a coded enhancement layer;

a second decoding section that decodes the received coded enhancement layer;

a first synthesis section that synthesizes the decoded base layer and the decoded enhancement layer; and

a display section that displays the synthesis result
5 of the first synthesis section.

12. The video receiving apparatus according to claim 11, for receiving a video stream transmitted from the video transmitting apparatus according to claim 8, the
10 video receiving apparatus comprising:

a third receiving section that receives transmitted divided region information;

a second synthesis section that synthesizes the received divided region information with a decoded base
15 layer; and

a setting section that sets a region of interest by a specification by a user,

wherein the display section displays a synthesis result of the second synthesis section on a same screen
20 or on a separate screen with the synthesis result of the first synthesis section.

13. The video receiving apparatus according to claim 11, further comprising:

25 a specifying section that specifies divided regions in coding the enhancement layer; and

a third transmitting section that transmits a

specifying result of the specifying section.

14. The video receiving apparatus according to claim 11, further comprising a receiving section that receives the decoding region information,

wherein the first decoding section performs decoding processing using the received decoding region information.

15. The video receiving apparatus according to claim 14, wherein the first decoding section expands a region included in the received decoding region information in a direction of a motion vector, and performs decoding processing using the expanded decoding region information.

16. A video transmitting method of layered-coding and transmitting input video as a video stream of a base layer and an enhancement layer, the method comprising:

a first coding step of coding the base layer;
a calculating step of calculating divided regions in coding the enhancement layer; and

a second coding step of intra-frame coding the enhancement layer for each divided region calculated in the calculating step.

17. A video receiving method for receiving a video stream

transmitted using the video transmitting method according to claim 16, the video receiving method comprising:

a first receiving step of receiving the coded base layer;

5 a first decoding step of decoding the coded base layer received in the first receiving step;

a second receiving step of receiving the coded enhancement layer;

10 a second decoding step of decoding the coded enhancement layer received in the second receiving step;

a synthesis step of synthesizing the base layer decoded in the first decoding step and the enhancement layer decoded in the second decoding step; and

15 a displaying step of displaying a synthesis result in the synthesis step.